

## REMARKS/ARGUMENTS

### STATUS OF THE CLAIMS

Claims 104-111, 113-126, 128-140, and 286-303 are pending with entry of this amendment, claims 301-303 being added herein, claim 127 being cancelled herein, and claims 1-103, 112, and 141-285 having been cancelled previously. Claims 104, 128, 129, and 293 are amended herein. Claim 286 is withdrawn. These amendments introduce no new matter and support is replete throughout the specification. These amendments are made without prejudice to renewal of the claims in their original form and are not to be construed as abandonment or dedication of the previously claimed subject matter or agreement with any objection or rejection of record.

Claim 104 has been amended to include the limitations of claim 127, which has been cancelled. Claim 293 has been similarly amended. Support for the amendments can be found throughout the specification, e.g., at paragraphs 203-206, as well as in the claims as originally filed. The dependency of claim 128 has been amended for consistency with the cancellation of claim 127 and the amendments to claim 104.

Claim 129 has been amended to more clearly claim desired embodiments of the invention by specifying that the first and second sealing layers are separate from the electrode layers and encompass the entire photoactive layer. Support for the amendments can be found, e.g., at paragraphs 204-205.

Support for new claims 301-303 can be found, e.g., at paragraphs 203-204.

Applicants submit that no new matter has been added to the application by way of the above claim amendments. Accordingly, entry of the Amendment is respectfully requested.

The action of June 4, 2009 included claim rejections for alleged obviousness (items 3-6). Applicants traverse all rejections and objections, to the extent that they may be applied to the amended claims, for the reasons noted herein.

THE CLAIMS ARE NOT OBVIOUS (ACTION ITEMS 3-6)

Item 3

Claims 104-111, 113, 115, 118-119, 121-128, 130-133, 137-138, and 287-300 were rejected for alleged obviousness under 35 USC 103(a) over Nelles (US 2002/0117201) in view of Salafsky (USPN 6,239,355). To the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

As recently reaffirmed by the Supreme Court in KSR International Co. v. Teleflex, Inc. (550 U.S. 398 (2007)), the appropriate standard for analyzing questions of obviousness is that

“the scope and content of the prior art are determined, differences between the prior art and the claims at issue are analyzed and the level of ordinary skill in the pertinent art is resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unresolved needs, failure of others, etc. might be utilized to give light to the circumstances surrounding the origin of the subject matter to be patented.

*Id.* quoting Graham v. John Deere of Kansas City 383 U.S. 1, 17-18.

This Graham v. John Deere standard has long been interpreted by the Office to mean that three requirements must be met for a *prima facie* case of obviousness. First, the prior art reference(s) must teach or suggest all of the limitations of the claims. Second, there must be a motivation to modify the reference or combine the teachings to produce the claimed invention (M.P.E.P. § 2143.01). Third, a reasonable expectation of success is required (M.P.E.P. § 2143.02).

A memorandum dated May 3, 2007, from the Deputy Commissioner to the Technology Center Directors regarding the KSR/Graham standard reiterates that, while “The Court rejected a rigid application of the ‘teaching, suggestion, or motivation’ (TSM) test,” it “did not totally reject the use of ‘teaching, suggestion, or motivation’ as a factor in the obviousness analysis.” The memo concludes that “in formulating a rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed.” Similarly, guidelines for examination recently published in the

Federal Register (vol. 72 no. 195 p. 57526-57535) also highlight the need for “clear articulation of the reason(s) why the claimed invention would have been obvious” (p. 57528).

Application of the KSR/Graham standard in the present case indicates that the claims at issue are not obvious.

First, the combination of Nelles and Salafsky fails to teach all the limitations of the claims. As noted above, independent claims 104 and 293 have been amended to include the limitations of previous claim 127 and specify that the photoactive layer is hermetically sealed. The Action has not established that the combination of Nelles and Salafsky teaches a photovoltaic device as specified in the instant claims where the photoactive layer is hermetically sealed. The Action notes that in Figure 1 of Salafsky, the electrodes (104 and 108) cover the top and bottom surfaces of the photoactive layer (106); Action at pages 5-6. Applicants note, however, that Figure 1 does not show the electrodes hermetically sealing the photoactive layer: electrodes 104 and 108 as shown in Figure 1 do not cover the sides of photoactive layer 106. The Action has therefore not established how these electrodes can be considered to hermetically seal the photoactive layer.

Additional points of distinction are present in the dependent claims, but it is not necessary to address each additional point since the combination of Nelles and Salafsky fails to teach all the elements of claims 104 and 293. Applicants note, however, with respect to claim 128 that the Action has not established that Nelles and Salafsky teach a sealing layer.

Furthermore, motivation to modify the teachings of the references is lacking. For example, the Action alleges that it would have been obvious to have a photoactive layer hermetically sealed by the electrodes (Action at page 6). The Action, however, provides no basis for this allegation, merely asserting that it would have been obvious because it was obvious. With respect to claims 132-133, Applicants note that merely because a device is, *arguendo*, potentially capable of assuming a coiled or reciprocating stacked architecture does not mean it is obvious to form it into such configurations; no reason for doing so based on the art rather than on Applicants’ disclosure has been identified. Since no rationale for modifying the teachings of the references has been established, the argument presented in the Action that the references be modified involves an improper hindsight reconstruction of the

invention. Moreover, there is no reasonable expectation of success, e.g., since the suggested combination does not result in the present invention.

Because the combination of Nelles and Salafsky fails to teach all the limitations of the claims at issue, because motivation for combining the teachings of Nelles and Salafsky is lacking, and because there is no reasonable expectation of success, Applicants respectfully request that the rejections be reconsidered and withdrawn.

Item 4

Claims 114, 116-117, and 120 were rejected for alleged obviousness under 35 USC 103(a) over Nelles and Salafsky further in view of Alivisatos (US 2003/0226498). To the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

The combination of Nelles, Salafsky, and Alivisatos does not meet the requirements for a *prima facie* case of obviousness. First, the combination does not teach all the limitations of the claims. As described above with respect to claim 104, Nelles and Salafsky fail to teach at least a hermetically sealed photoactive layer as specified in the instant claims. Merely adding nanowires, branched nanocrystals, or semiconductor materials from Alivisatos thus still fails to teach all the limitations of the claims.

In addition, motivation to combine the teachings of the references is lacking and there is no reasonable expectation of success, e.g., because the suggested combination does not result in the present invention

Applicants respectfully request that the rejections be reconsidered and withdrawn.

Item 5

Claims 129 and 134-136 were rejected for alleged obviousness under 35 USC 103(a) over Nelles and Salafsky further in view of Simmons (USPN 5,720,827). To the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

The combination of Nelles, Salafsky, and Simmons does not meet the requirements for a *prima facie* case of obviousness. First, the suggested combination does not teach all the limitations of the claims. As described above with respect to claim 104, Nelles and Salafsky fail to teach at least a hermetically sealed photoactive layer as specified in the instant claims. Furthermore, with respect to claim 129, although the Action alleges that Simmons teaches sealing layers 38 and 40 at Figure 3 and column 8 line 3-column 9 line 40, Applicants note that layers 38 and 40 are described as electrically insulating layers, not sealing layers; see

column 8 lines 21-26. Claim 129 has been amended to clarify that the first and second sealing layers encompass the entire photoactive layer. Examination of Figure 3 indicates that insulating layers 38 and 40 fail to encompass photoactive region 20, and thus clearly do not meet the limitations of claim 129.

In addition, motivation to combine the teachings of the references is lacking and there is no reasonable expectation of success, e.g., because the suggested combination does not result in the present invention

Applicants respectfully request that the rejections be reconsidered and withdrawn.

Item 6

Claims 139-140 were rejected for alleged obviousness under 35 USC 103(a) over Nelles and Salafsky further in view of Ono (US 2003/0013008). To the extent that the rejections are applied to the amended claims, Applicants respectfully traverse.

Again, the combination of Nelles, Salafsky, and Ono does not meet the requirements for a *prima facie* case of obviousness. For example, the suggested combination does not teach all the limitations of the claims. As described above, Nelles and Salafsky fail to teach all the limitations of claim 104 from which claims 139-140 depend. Merely adding a second photoactive layer and third electrode or a recombination material from Ono thus still fails to teach all the limitations of the claims. Furthermore, Applicants do not concede that the third electrode of Ono is equivalent to a recombination material as specified in claim 140.

In addition, motivation to combine the teachings of the references is lacking and there is no reasonable expectation of success, e.g., because the suggested combination does not result in the present invention

Applicants respectfully request that the rejections be reconsidered and withdrawn.

### **CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the claims are deemed not to be in condition for allowance after consideration of this Response, a telephone interview with the Examiner is hereby requested. Please telephone Monica Elrod-Erickson at (510) 337-7871 to schedule an interview.

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QUINE INTELLECTUAL PROPERTY LAW GROUP  
P.O. BOX 458, Alameda, CA 94501  
Tel: 510 337-7871  
Fax: 510 337-7877  
PTO Customer No.: **22798**  
Deposit Account No.: **50-0893**

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stacy Landry", with a large, stylized flourish at the end.

Stacy Landry

Reg. No. 42,779

For Monica Elrod-Erickson, Ph.D.,

Reg. No. 51,651